VERITAS NetBackup™ 4.5

User's Guide

for Mac OS

March 2002
30-000521-011

VERITAS

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NetBackup 4.5 User's Guide for Mac OS

Preface

This guide describes how to use NetBackup to back up and restore folders that reside on the Macintosh.

Audience

This guide is written for the end user and system administrator.

Organization

This guide is organized as follows:

Chapter 1, “Introduction”, provides an overview of NetBackup, describes how the end user operates NetBackup, and describes technical terms and concepts.

Chapter 2, “Operating Notes”, explains how to use NetBackup to perform backup, archive, and restore operations.

Chapter 3, “Using the NetBackup Browser”, describes the various windows, screens, and menus associated with NetBackup.

Chapter 4, “Reference”, explains how to install the NetBackup client software for Macintosh.

Related Documentation

The following documents provide related information. For a more detailed listing of NetBackup documents, refer to *NetBackup Release Notes*.

- *NetBackup Installation Guide for PC Clients*

  Explains how to install NetBackup PC client software. The PC clients are Windows, Mac OS, and Novell NetWare.

If you have a UNIX server, refer to these documents:

- *NetBackup Release Notes*

  Provides important information about NetBackup DataCenter and BusinesServer products on UNIX- and Windows-based servers, such as the platforms and operating systems that are supported and operating notes that may not be in the NetBackup manuals or the online help.

- *NetBackup DataCenter System Administrator's Guide for UNIX*

  Explains how to configure and manage NetBackup DataCenter on a UNIX server.

- *NetBackup BusinesServer System Administrator's Guide for UNIX*

  Explains how to configure and manage NetBackup BusinesServer on a UNIX server.

- *NetBackup Troubleshooting Guide for UNIX*

  Provides troubleshooting information for UNIX-based NetBackup products.

If you have a Windows server, refer to these documents:

- *NetBackup Release Notes*

  Provides important information about NetBackup software, such as the platforms and operating systems that are supported and operating notes that may not be in the manuals or the online help.

- *NetBackup DataCenter System Administrator's Guide for Windows*

  Explains how to configure and manage NetBackup DataCenter on a Windows server.

- *NetBackup BusinesServer System Administrator's Guide for Windows*

  Explains how to configure and manage NetBackup BusinesServer on a Windows server.

- *NetBackup Troubleshooting Guide for Windows*

  Provides troubleshooting information for Windows-based NetBackup products.

Conventions

The following explains typographical and other conventions used in this guide.

Type Style

Typographic Conventions

Typeface	Usage
`Bold fixed width`	Input. For example, type **`cd`** to change directories.
`Fixed width`	Paths, commands, filenames, or output. For example: The default installation directory is `/opt/VRTSxx`.
Italics	Book titles, new terms, or used for emphasis. For example: *Do not* ignore cautions.
Sans serif (italics)	Placeholder text or variables. For example: Replace *filename* with the name of your file.
Serif (no italics)	Graphical user interface (GUI) objects, such as fields, menu choices, etc. For example: Enter your password in the **Password** field.

Notes and Cautions

Note This is a Note. Notes are used to call attention to information that makes using the product easier or helps in avoiding problems.

Caution This is a Caution. Cautions are used to warn about situations that could cause data loss.

Key Combinations

Some keyboard command sequences use two or more keys at the same time. For example, holding down the **Ctrl** key while pressing another key. Keyboard command sequences are indicated by connecting the keys with a plus sign. For example:

Press Ctrl+t

Command Usage

The following conventions are frequently used in the synopsis of command usage.

brackets [ ]

The enclosed command line component is optional.

Vertical bar or pipe (|)

Separates optional arguments from which the user can choose. For example, when a command has the following format:

`command` *arg1* | *arg2*

the user can use either the *arg1* or *arg2* variable.

Terms

The terms listed in the table below are used in the VERITAS NetBackup documentation to increase readability while maintaining technical accuracy.

Term	Definition
Microsoft Windows, Windows	Terms used as nouns to describe a line of operating systems developed by Microsoft, Inc. A term used as an adjective to describe a specific product or noun. Some examples are: Windows 95, Windows 98, Windows NT, Windows 2000, Windows servers, Windows clients, Windows platforms, Windows hosts, and Windows GUI. Where a specific Windows product is identified, then only that particular product is valid with regards to the instance in which it is being used. For more information on the Windows operating systems that NetBackup supports, refer to the VERITAS support web site at `http://www.support.veritas.com`.
Windows servers	A term that defines the Windows server platforms that NetBackup supports; those platforms are: Windows NT and Windows 2000.
Windows clients	A term that defines the Windows client platforms that NetBackup supports; those platforms are: Windows 95, 98, ME, NT, 2000, XP (for 32- and 64-bit versions), and LE.

Getting Help

For updated information about this product, including system requirements, supported platforms, supported peripherals, and a list of current patches available from Technical Support, visit our web site:

`http://www.support.veritas.com/`

VERITAS Customer Support has an extensive technical support structure that enables you to contact technical support teams that are trained to answer questions to specific products. You can contact Customer Support by sending an e-mail to support@veritas.com, or by finding a product-specific phone number from the VERITAS support web site. The following steps describe how to locate the proper phone number.

1. Open `http://www.support.veritas.com/` in your web browser.
2. Click **Contact Support**. The *Contacting Support Product List* page appears.
3. Select a product line and then a product from the lists that appear. The page will refresh with a list of technical support phone numbers that are specific to the product you just selected.

Introduction 1

You can start backups, archives, and restores directly from a NetBackup client, without logging into the NetBackup server. After a user-directed operation is started, it runs under control of the NetBackup server. You request the service and the server manages the rest, including the storage and retrieval of data.

Backup and Archive

A *backup* saves copies of selected files and directories from a NetBackup client to a storage device on a NetBackup server.

An *archive* saves copies of selected files and directories from a NetBackup client to a storage device on a NetBackup server, then deletes the original files from the client.

Special Features

NetBackup special backup and archive features include the following:

- NetBackup allows you to select the NetBackup server that you want to use for user-directed backups.
- NetBackup allows you to view and select files and directories from the file systems on the client.

File Permissions

The Mac OS client generally will back up files that are opened by other processes. There are exceptions for files in shared directories or on remote volumes.

User-Directed Backups

During configuration, the administrator on the NetBackup server defines time periods when backup and archive requests from your computer can be performed. NetBackup permits user-directed operation only during the time periods scheduled by the system administrator.

Note Full and incremental backups can only be performed by a scheduled backup from the NetBackup server.

Administrator-Controlled Backups and Archives

The NetBackup administrator can schedule full and incremental backups that occur automatically and unattended, under control of the NetBackup server. When properly scheduled, the server-directed backups will meet most of your backup requirements.

Note Some applications retain locks on files that are left open during an administrator-controlled backup. The result is a partially successful backup. To avoid this problem, shut down all applications on the client computer before administrator-controlled backups begin.

There are three kinds of backups:

A *full backup* copies to a storage unit all files and directories that are beneath a specified directory. If a full backup fails, NetBackup attempts it at the same time each day until a full backup is successfully complete.

A *cumulative-incremental backup* backs up all files that have changed since the last successful full backup. Incremental backups use the datetime stamp to determine if a file has changed. Each incremental backup is relative to the previous full or incremental backup.

A *differential-incremental backup* backs up all files that have changed since the last successful incremental or full backup.

Restore

A restore reads backed up or archived copies from the storage device on the NetBackup server and restores them to the client.

Special Features

NetBackup gives the user the ability to select which files will be restored. NetBackup supports the following ways to restore a backup:

A *redirected restore* to a different client restores files or directories to a client other than the one from which they were backed up. This is possible only if the NetBackup administrator sets up the configuration to allow it. The administrator on the NetBackup server can direct restores to any NetBackup client (regardless of which client the files came from).

A *full restore* restores a directory from a range of backups. The restored directory includes all the files that were backed up during the range of backups. The restored directory will also include files that were deleted from the local disk during the specified time period.

A *true-image restore* restores the contents of a directory to what it was at the time of any scheduled full backup or incremental backup. The restored directory will contain only the files that existed in it at the time of a specified full backup or incremental backup. Files that were backed up but then deleted from the local disk prior to the specified time are not included. The configuration on the NetBackup server must specify true-image backups for your client in order for you to perform true-image restores.

Some other NetBackup special restore features include the following:

- NetBackup allows you to select the NetBackup server from which to perform user-directed restores.
- NetBackup allows you to view the backup history for your client or for other clients that were backed up by your client and select items to restore.

File Permissions and Open Files

File permissions require write permission on the destination directory in order to restore a file. NetBackup will restore a file, even when an existing file has an identical name. The old file is moved to the Trash.

Operating Notes 2

This chapter provides information about the operation and use of NetBackup Mac OS client software.

- Performance Considerations
- Memory Considerations
- AppleShare IP Considerations
- Current Limitations
- File Systems Supported
- Archive Format
- TCP/IP Considerations
- Energy Saver Considerations

Performance Considerations

- Not surprisingly, the faster your Macintosh processor, the better throughput you can expect.
- Compression can have a dramatic negative impact on performance. Typically, backups take two to three times longer with compression turned on.
- True Image Recovery (TIR) can have a negative impact on performance. This is most noticeable during incremental backups.
- Usually, you see better throughput backing up large files than small files. For example, a single 1 megabyte file will generally be backed up more quickly than 1000 files that total 1 megabyte in size.
- Complicated screen savers can slow down the performance of NetBackup. If you choose to use a screen saver, one that simply blanks the screen will work best.

Memory Considerations

- While waiting for requests from a server, the `NetBackupListen` extension uses about:
  - 260 kilobytes with virtual memory
  - 330 kilobytes without virtual memory
- To process a backup or restore request from the server, the `NetBackupBPCD` application needs:
  - 2000 kilobytes (minimum) to 4000 kilobytes (preferred) with virtual memory
  - 2700 kilobytes to 4700 kilobytes without virtual memory
- The minimum memory partition is usually sufficient for `NetBackupBPCD` to complete uncompressed backups and restores. The preferred memory partition is usually required for `NetBackupBPCD` to complete compressed backups and restores.
- If `NetBackupBPCD`'s memory partition is less than its preferred value, `NetBackupBPCD` performs an uncompressed backup even if the server requested a compressed backup.

AppleShare IP Considerations

There is a bug in some versions of AppleShare IP that causes NetBackup to hang while attempting to back up and restore file sharing attributes. To work around this bug, set the “ignoresharing” `mac.conf` value to “1” on the Macintosh NetBackup client. See the description of “ignoresharing' in the “Editing Client Configuration Files” section of the *NetBackup Installation Guide for PC Clients*.

AppleShare IP will also use a lot of the Macintosh's CPU even when idle. To improve NetBackup's performance on a system with AppleShare IP, you should set the “nice” `mac.conf` value to “0” as described in the “Editing Client Configuration Files” section of the *NetBackup Installation Guide for PC Clients*.

It is also recommended that you configure OpenDoc to always run if you are using both AppleShare IP and NetBackup. This prevents the AppleShare IP Web & File Admin utility from hanging after NetBackup has run.

1. Open the OpenDoc Setup control panel.
2. Click on the **Start OpenDoc at system startup** button.
3. Click on the **Stop OpenDoc at system shutdown** button.
4. Click on the **Start** button if OpenDoc is not running.

Current Limitations

- NetBackup for Macintosh can only process one request from a NetBackup server at a time.

  This means that two backup or restore operations cannot occur on the same Macintosh at the same time. If a server gets a `Connection Refused` or `Connection Timeout` error message from a Mac OS client, this probably means that another operation is in progress. This can also mean that the Macintosh isn’t running or the NetBackup for Mac OS software is not installed.

- Initial installations of NetBackup for Mac OS must be done with the NetBackup Installer on the target Macintosh.

  Initial installations of some other NetBackup clients can be done remotely from a NetBackup server through `ftp` or `rsh`. Since most Macintoshes do not have an `ftp` or `rsh` daemon, this is not an option for Macintoshes.

- Update installations of NetBackup for Mac OS cannot be done with the NetBackup server software.

A future release of the NetBackup server software will be able to perform update installations.

- Macintosh files with a name that includes the NUL character are not backed up. Typically these files are third-party extensions that need to run before any others. An example is the Virex Control Panel.
- If a Macintosh has two volumes with the same name, only one is backed up by NetBackup. Usually, the volume to be backed up is the first one mounted. For example, if your start-up disk is named **Macintosh HD** and you also have an external disk named **Macintosh HD**, NetBackup backs up only the start-up disk.
- Currently, Macintosh Creator and File Type attributes cannot be used in exclude and include lists. This will be addressed in a future release.
- Macintosh file names with non-ANSI characters may look different when viewed on UNIX or other non-Macintosh systems. For example, the bullet character (•), option-8 on a Macintosh, appears as a yen character (¥) on a terminal that uses an ISO Latin-1 font.

File Systems Supported

- The NetBackup for Mac OS client can back up or restore only a Hierarchical File System (HFS or HFS+) on a Macintosh. Most Macintosh hard disks, floppy disks, and AppleShare volumes use HFS. An example of a non-HFS file system is the Macintosh File System (MFS) that was used with 400K floppy disks on the original Macintosh in the mid-1980s.
- The NetBackup for Mac OS client ignores locked volumes. Examples of locked volumes are CD-ROMs and floppy disks with the write tab set in the locked position.
- The NetBackup for Mac OS client ignores off-line volumes. An example of an off-line volume is a floppy disk that is ejected through the **Eject Disk** menu.
- AppleShare volumes can be backed up if the **Follow NFS mounts** option is selected for the Macintosh's policy on the NetBackup server.
- A floppy disk can be backed up if it has an HFS file system and its write tab is set in the unlocked position.

Archive Format

The format of the archive generated by the NetBackup for Mac OS client is the same as the archive generated by a UNIX NetBackup client with one exception:

> A UNIX NetBackup client appends a Mangle Table to the end of the archive but the NetBackup for Mac OS client does not.

The GNU tar uses a Mangle Table to handle long path names. NetBackup software does not use the Mangle Table.

If you restore files from a NetBackup for Mac OS archive onto a UNIX NetBackup client, each restored file will be in MacBinary format. A MacBinary file has a 128 byte header with Macintosh attribute information, followed by the data fork of the Macintosh file, followed by the resource fork of the Macintosh file. The MacBinary format is commonly used when transferring Macintosh files between non-Macintosh systems.

You can usually restore files from a UNIX NetBackup archive to a Macintosh NetBackup client. If you do this, however, there are some things to be aware of:

- Any slash (/) character in a Macintosh file or folder name maps to a colon (:) character in the UNIX path on the server.

  For example, suppose you have a file named Notes 95/09/30, in a folder named **My Stuff**, on a hard disk named **Macintosh HD**. That file must be specified in the file list as:

  ```
  /Macintosh HD/My Stuff/Notes 95:09:30
  ```

- Macintosh file and folder names are limited to 31 characters. UNIX file or directory names are truncated if they contain more than 31 characters.
- Unlike UNIX names, Macintosh names are case insensitive. For example, if you have two UNIX files, "`Cat`" and "`CAT`," in the same directory, only one will be restored on a Macintosh.
- If a file is in MacBinary format, the NetBackup for Mac OS client will restore it with its Macintosh attributes, data fork, and resource fork.
- If a file is not in MacBinary format, the NetBackup for Mac OS client attempts to determine if it is a text file. If it appears to be text, the file is restored as a text file. Otherwise, it will be restored as a plain binary file with Creator '????' and File Type '????'.

Why DNS is Required

NetBackup must be able to map host names (for example, `raistlin.null.none.com`) to IP addresses (for example, 129.1.2.3) and IP addresses to host names. A properly configured DNS allows NetBackup to do that.

TCP/IP Considerations

For best results with NetBackup, your Macintosh should be configured with TCP/IP always loaded. Typically, Macintoshes are initially installed with TCP/IP loaded "only when needed." This will sometimes cause backups to fail.

To make sure that TCP/IP is alway loaded, you can do this from your Macintosh:

1. Open the TCP/IP Control Panel.
2. Select **User Mode** from the **Edit** menu.
3. Select **Advanced** and click **OK**.
4. Click on the **Options** button.
5. Click the **Active** button, uncheck **Load only when needed**, and click **OK**.
6. Close the TCP/IP Control Panel.
7. Click **OK** if asked to save your changes.

Energy Saver Considerations

Typically, Macintoshes are initially installed so that they will "sleep" after a certain amount of inactivity (often 30 minutes). Part of the sleep process is to "spin-down" your hard disks. When your hard disks are asleep, NetBackup will not be able to back up your system. This will be a problem when your Macintosh is scheduled to be backed up while your are not using it.

To allow NetBackup to back up your Macintosh during off-hours, you should turn off hard disk sleep. If your Macintosh has an Energy Saver Control Panel, this can be done as follows:

1. Open the Energy Saver Control Panel.
2. Click the **Show Details** button.
3. Check **Separate timing for hard disk sleep**.
4. Drag the slider for **hard disk sleep** to **Never**.
5. Close the Energy Saver Control Panel.

Using the NetBackup Browser 3

There are two ways to perform NetBackup operations. The system administrator can perform NetBackup operations on the master server. NetBackup operations can also be performed on-demand by a user with the NetBackup Browser.

This chapter describes how NetBackup is used by the system administrator and the Macintosh user. The following major topics are covered:

- NetBackup and the Master Server
- NetBackup and the Mac OS Client User

NetBackup and the Master Server

After the NetBackup software has been installed on your Macintosh, files stored on the Macintosh can be backed up automatically by the system administrator.

Backup or Archive

Your system administrator has configured the NetBackup servers on your network to periodically connect to your Macintosh and back up or archive some or all of your files.

Note The NetBackup software runs in the background on your Macintosh. Your Macintosh must be turned on and ready in order for NetBackup to back up your files. Check with the NetBackup administrator to determine when backups will occur.

Restore

If you need any of your Macintosh files restored, you can contact your system administrator. The system administrator can start a restore of files to your Macintosh from the NetBackup master server.

NetBackup and the Mac OS Client User

The client user can also control NetBackup through the NetBackup Browser. This section contains a tutorial that will walk you through the following NetBackup operations:

- How to Start the NetBackup Browser
- Backup or Archive Tutorial
- Restore Tutorial

For your convenience, these topics are included in the online Help for the NetBackup Browser.

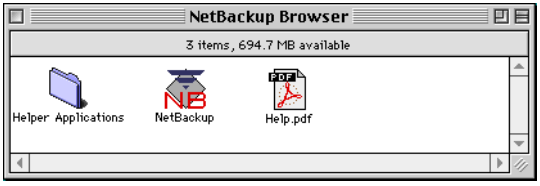
How to Start the NetBackup Browser

This section describes how to use the NetBackup Browser to perform backups, archives, and restores. Every time you want to open the NetBackup Browser, use the procedure described in this tutorial.

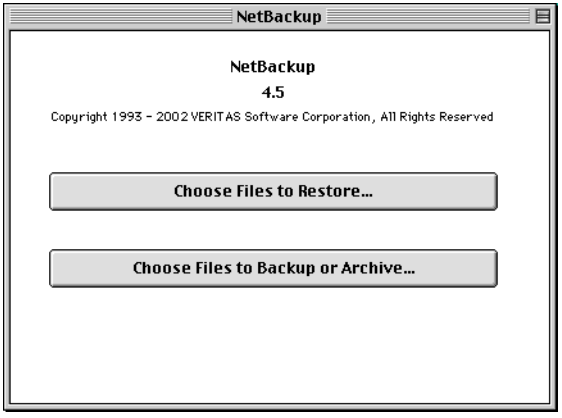
1. Before you start, make a note of the file name(s) and the folder(s) in which your file is stored. For this tutorial you will backup the `Help.pdf` file stored in the `NetBackup Browser` folder, which is installed on a volume named Macintosh HD.

2. Double-click the **Macintosh HD** icon. A folder will open.

3. Double-click the `NetBackup Browser` folder to open its window.



4. Double-click the **NetBackup** icon to launch the NetBackup Browser.



You have successfully started the NetBackup Browser. The following section will walk you through an actual backup.

Backup or Archive Tutorial

The instructions in this section describe how to:

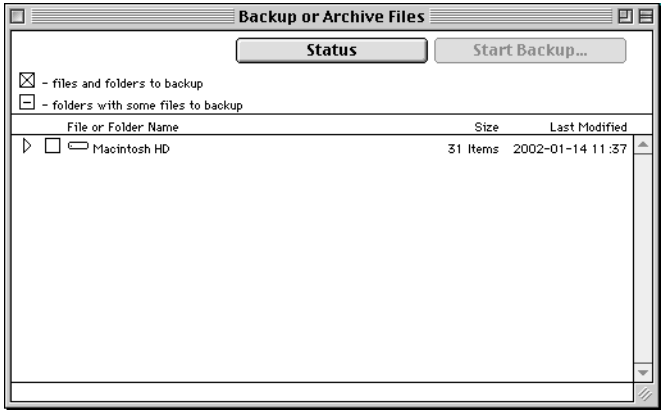
- Backup the Help.pdf File
- Monitor the Status of the Backup Operation

Backup the Help.pdf File

1. Start NetBackup as described in the "How to Start the NetBackup Browser" section of this tutorial to launch the NetBackup Browser.

2. Click **Choose Files to Backup or Archive**.

   The Backup or Archive Files window displays.

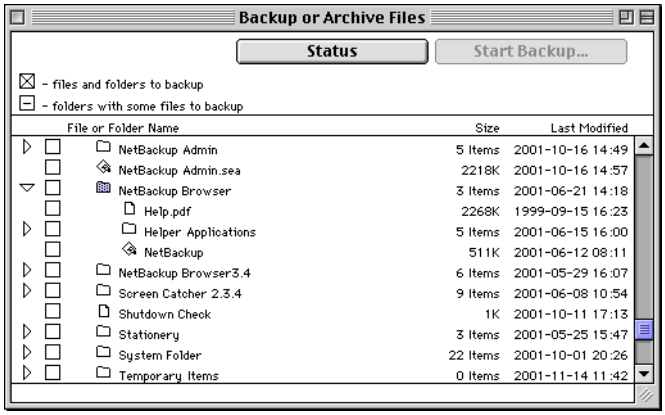


   Notice that the triangle to the left of the Macintosh HD volume is pointed to the right. This indicates that the folder is closed.

3. Click the triangle to open the folder. Notice that the triangle is now pointing down and the contents of the Macintosh HD volume are displayed.

4. Scroll down until you find the `NetBackup Browser` folder.

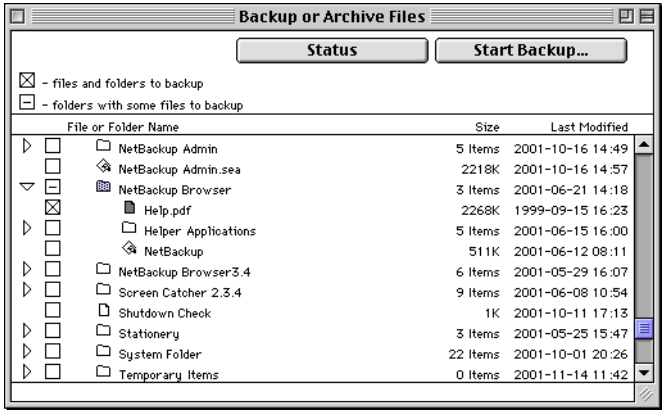
5. Click the triangle to open the `NetBackup Browser` folder.


Backup or Archive Files
Status
Start Backup...
- files and folders to backup
- folders with some files to backup
File or Folder Name
Size
Last Modified
NetBackup Admin 5 Items 2001-10-16 14:49
NetBackup Admin.sea 2218K 2001-10-16 14:57
NetBackup Browser 3 Items 2001-06-21 14:18
Help.pdf 2268K 1999-09-15 16:23
Helper Applications 5 Items 2001-06-15 16:00
NetBackup 511K 2001-06-12 08:11
NetBackup Browser3.4 6 Items 2001-05-29 16:07
Screen Catcher 2.3.4 9 Items 2001-06-08 10:54
Shutdown Check 1K 2001-10-11 17:13
Stationery 3 Items 2001-05-25 15:47
System Folder 22 Items 2001-10-01 20:26
Temporary Items 0 Items 2001-11-14 11:42

6. Find the `Help.pdf` file.

   This file was loaded into the `NetBackup Browser` folder during installation.

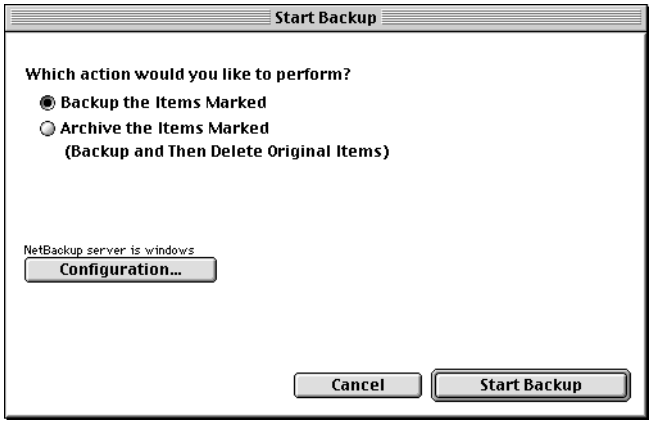
7. Click the `Help.pdf` file.


Backup or Archive Files
Status
Start Backup...
- files and folders to backup
- folders with some files to backup
File or Folder Name
Size
Last Modified
NetBackup Admin 5 Items 2001-10-16 14:49
NetBackup Admin.sea 2218K 2001-10-16 14:57
NetBackup Browser 3 Items 2001-06-21 14:18
Help.pdf 2268K 1999-09-15 16:23
Helper Applications 5 Items 2001-06-15 16:00
NetBackup 511K 2001-06-12 08:11
NetBackup Browser3.4 6 Items 2001-05-29 16:07
Screen Catcher 2.3.4 9 Items 2001-06-08 10:54
Shutdown Check 1K 2001-10-11 17:13
Stationery 3 Items 2001-05-25 15:47
System Folder 22 Items 2001-10-01 20:26
Temporary Items 0 Items 2001-11-14 11:42

   Notice that the check box preceding the file name now has an [X] in it. This means that the file has been selected. Notice also that the check box preceding the `NetBackup Browser` folder name has a [-]. This means that something in the folder has been selected. If everything in the folder had been selected, you would see an [X] in the check box.

8. Click **Start Backup**.

The Start Backup dialog box displays.

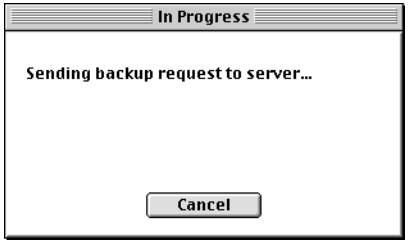


9. Click the **Backup the Items Marked** radio button.

Caution If you choose **Archive the Items Marked** from this window, NetBackup will back up the `Help.pdf` file, then *delete* the original `Help.pdf` file from your Macintosh.

10. Click **Start Backup** to start the NetBackup operation.

The following dialog box displays.



The Macintosh will then return to the Backup or Archive Files window.

NetBackup will start backing up a copy of the `Help.pdf` file. Since you selected Backup, not Archive, the original `Help.pdf` file will remain on your Macintosh.

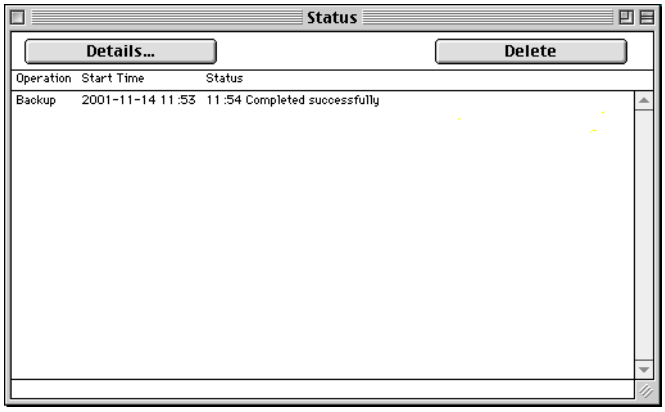
Monitor the Status of the Backup Operation

The status of the backup can be viewed while the backup is still running, or after it has completed.

1. Click **Status** on the Backup or Archive Files window.

Note You can also access the Status Window from the bar menu. From the **Windows** menu, select **Status**.

The Status window displays.

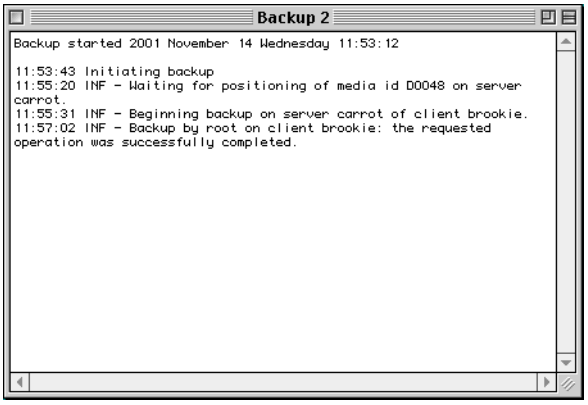


Use this window to monitor the progress of the backup or archive operation. The operation is finished when the phrase `Completed successfully` is displayed.

The **Delete** button on the Status window will delete the selected log file after the NetBackup operation is finished.

2. To display the log file for a NetBackup operation, either double-click on the backup log, or select the operation from the list in the window and click the **Details** button. You can view the log file while the operation is in progress, or after it is finished.

A log file similar to the following displays.


Backup 2
Backup started 2001 November 14 Wednesday 11:53:12
11:53:43 Initiating backup
11:55:20 INF - Waiting for positioning of media id D0048 on server carrot.
11:55:31 INF - Beginning backup on server carrot of client brookie.
11:57:02 INF - Backup by root on client brookie: the requested operation was successfully completed.

Restore Tutorial

In this section you are going to restore the file named `Help.pdf`. This file was backed up in the “Backup or Archive Tutorial” section of this tutorial.

The instructions in this section describe how to:

- Restore the Help.pdf File
- Monitor the Status of the Restore Operation

Restore the Help.pdf File

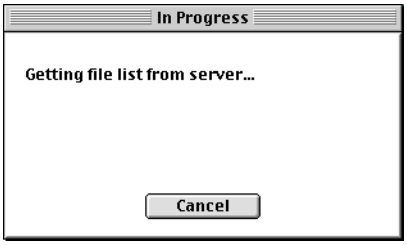
1. Start NetBackup as described in “How to Start the NetBackup Browser” section of this tutorial to launch the NetBackup Browser.

2. Click **Choose Files to Restore**.

   The following dialog box displays.

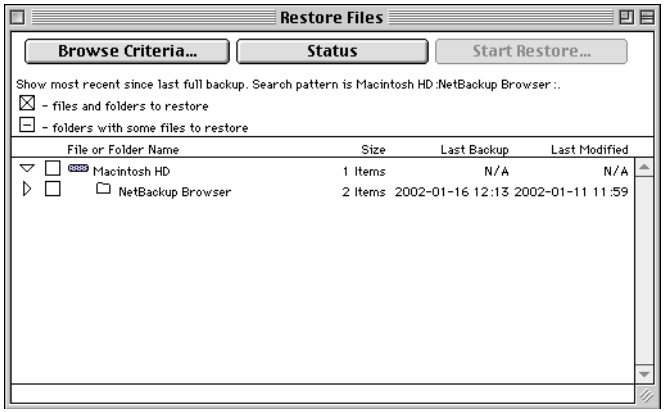
   An image list contains all files, directories, and catalog information associated with a backup.

   When the process is complete, the following dialog box displays.



   A file list contains the list of files that NetBackup created when the backup was performed.

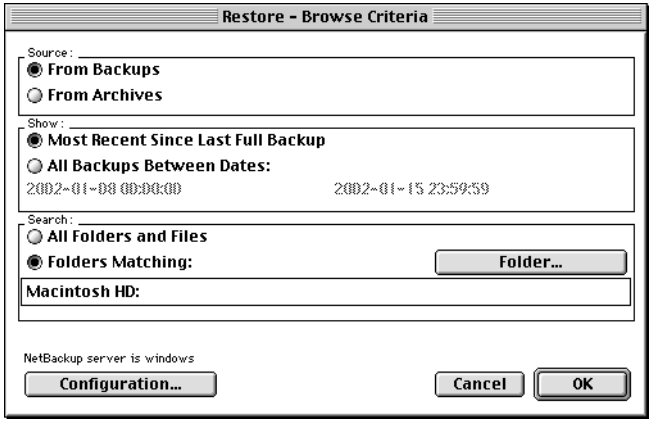
Next, the Restore Files window displays.



3. Select the file that you want to restore. In this tutorial, you will want to restore the `Help.pdf` file that you backed up in the "Backup or Archive Tutorial." Follow steps 2 through 7 in that tutorial as a reminder of how to select a file.

4. Click **Browse Criteria**.

   The Restore - Browse Criteria dialog box displays. This dialog box is used to enter parameters for NetBackup restore operations.

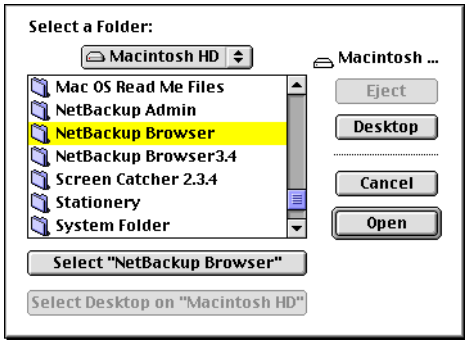


5. Click the **Folders Matching** radio button.

   This tells NetBackup that you are going to search for a particular file and / or folder.

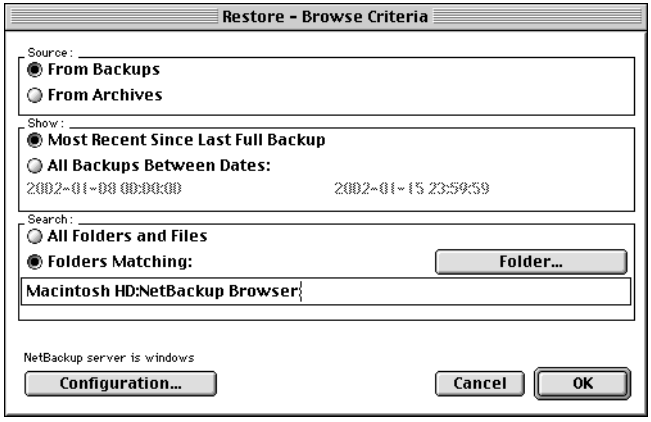
6. Click the **Folder** button.

7. Click the `NetBackup Browser` folder on the Macintosh HD.



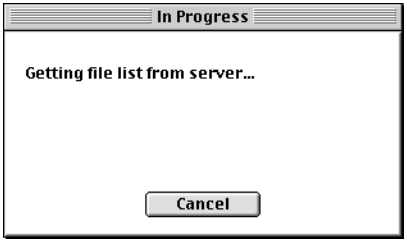
8. Click the **Select "NetBackup Browser"** button.

   The Restore - Browse Criteria dialog box displays again. NetBackup is set up to search for the most recent backups of the `NetBackup Browser` folder.



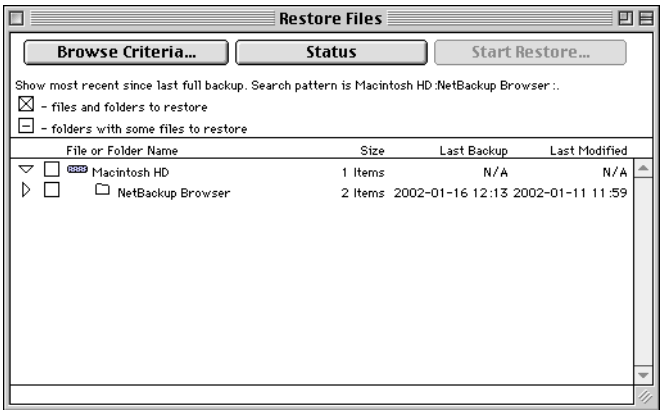
9. Click **OK**.

   The following dialog box displays.



A file list contains the list of files that NetBackup created when the backup was performed.

When the process is complete, the Restore Files window displays.



Note For this tutorial, you searched for the `NetBackup Browser` folder. You can be even more specific in your search and specify the `Help.pdf` file.

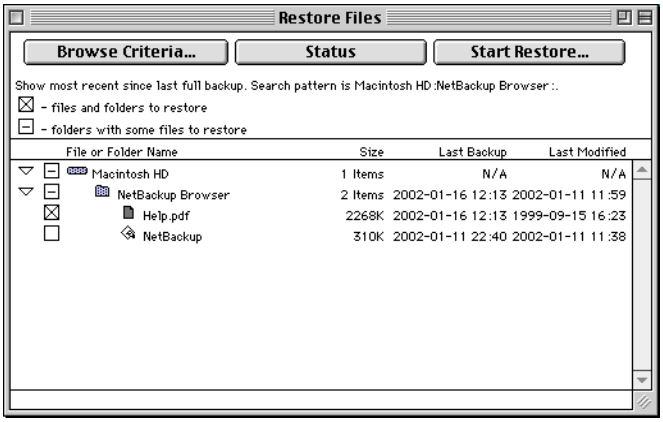
1. Click in the **Folders Matching** radio button in the Restore - Browse Criteria dialog box. The highlight will be removed and you will see a cursor blinking.
2. Use the right arrow key to scroll to the end of the line.
3. Type a colon (:).
4. After the colon, type the following: `Help.pdf`.
5. Click **OK**.

The search results will show the `Help.pdf` file under `NetBackup Browser` folder.

10. Open the `NetBackup Browser` folder by clicking on the triangle next to the folder name.

Notice that the triangle is now pointing down and the backed up contents of the Macintosh HD volume are displayed.

11. Click the `Help.pdf` file.



Notice that the check box preceding the file name now has an [X] in it. This means that the file has been selected. Notice also that the Macintosh HD check box and the `NetBackup Browser` folder check box both have a [-]. This means that something in the folder has been selected. If everything in the folder had been selected, an [X] would be displayed in the check box.

12. Click **Start Restore**.

The Start Restore dialog box displays.

13. Click the **Overwrite Existing Files** check box.

14. Click **Start Restore** to start the NetBackup restore operation.

The following dialog box displays.

When this operation is complete, the Restore Files widow displays. NetBackup will then start restoring the `Help.pdf` file.

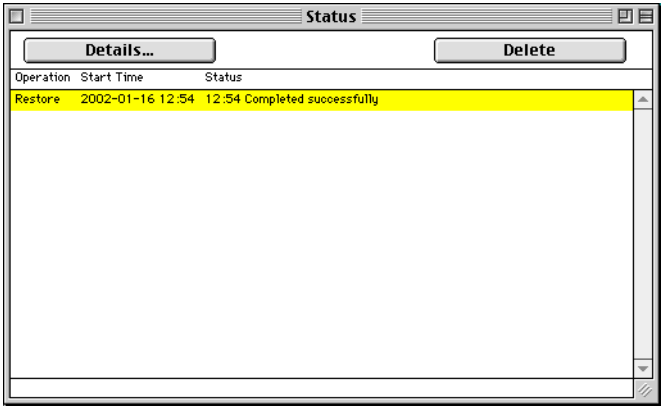
Monitor the Status of the Restore Operation

The status of the restore can be viewed while the restore operation is still running, or after it has completed.

1. Click **Status** on the Restore Files window.

Note You can also access the Status window from the bar menu. From the **Windows** menu, select **Status**.

The Status window displays.

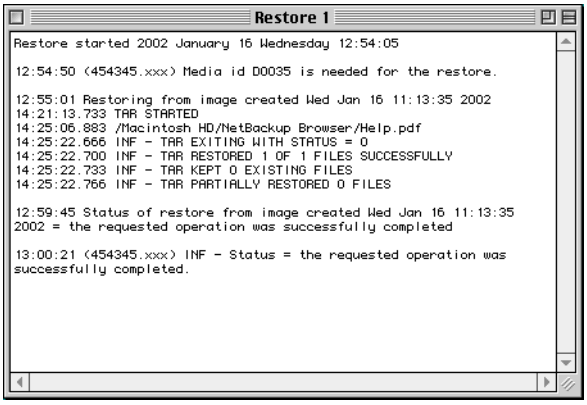


Use this window to monitor the progress of the restore operation. The operation is finished when the phrase `Completed successfully` is displayed.

The **Delete** button will delete the selected log file after the NetBackup operation is finished.

2. To display the log file for a NetBackup operation, either double-click on the restore log, or select the operation from the list in the window and click the **Details** button. You can view the log file while the operation is in progress, or after it is finished.

   The following log file displays.


Restore 1
Restore started 2002 January 16 Wednesday 12:54:05
12:54:50 (454345.xxx) Media id D0035 is needed for the restore.
12:55:01 Restoring from image created Wed Jan 16 11:13:35 2002
14:21:13.733 TAR STARTED
14:25:06.883 /Macintosh HD/NetBackup Browser/Help.pdf
14:25:22.666 INF - TAR EXITING WITH STATUS = 0
14:25:22.700 INF - TAR RESTORED 1 OF 1 FILES SUCCESSFULLY
14:25:22.733 INF - TAR KEPT 0 EXISTING FILES
14:25:22.766 INF - TAR PARTIALLY RESTORED 0 FILES
12:59:45 Status of restore from image created Wed Jan 16 11:13:35
2002 = the requested operation was successfully completed
13:00:21 (454345.xxx) INF - Status = the requested operation was
successfully completed.

Reference 4

This chapter provides reference information on the NetBackup Browser. The topics contained here are:

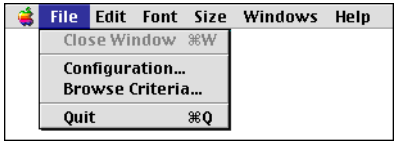
- Menus
- Windows
- Dialog Boxes

Menus

The menus for the NetBackup Browser are active when the following windows are active:

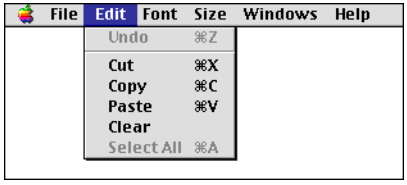
- NetBackup Main Window
- Backup or Archive Files Window
- Restore Files Window
- Status Window

File Menu



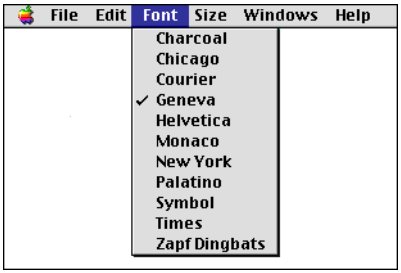
Configuration	Opens the Configuration dialog box.
Browse Criteria	Opens the Restore - Browse Criteria dialog box.
Quit	Exits and closes the NetBackup Browser.

Edit Menu



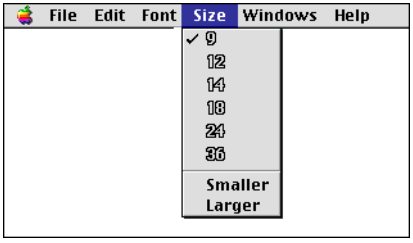
Use the **Edit** menu to modify text field contents.

Font Menu



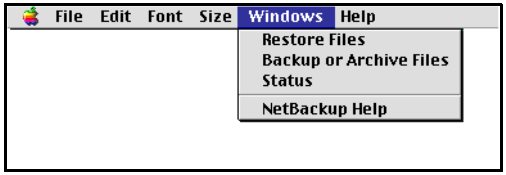
Use the **Font** menu to select the type of font used in the NetBackup displays.

Size Menu



Use the **Size** menu to change the size of font used in the NetBackup displays.

Windows Menu



Restore Files	Opens the Restore Files window.
Backup or Archive Files	Opens the Backup or Archive Files window.
Status	Opens the Status window.

NetBackup Help Opens the NetBackup Browser backup instructions in an Adobe Acrobat PDF file format. The instructions in the PDF file (`Help.pdf`) are identical to those in this manual.

Windows

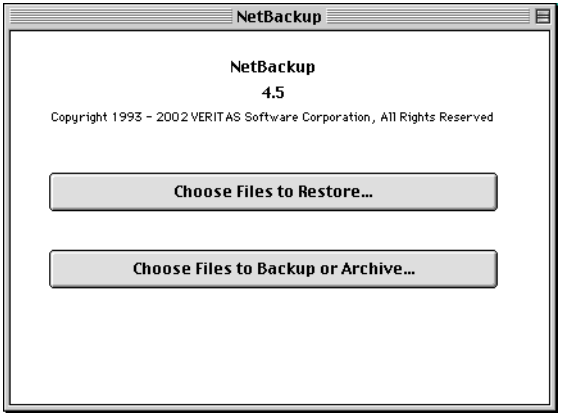
Use this section as a reference for NetBackup windows. Each window that you will see in the NetBackup Browser is illustrated, then followed by special instructions for its use.

Generally speaking, windows can be distinguished from dialog boxes by the close box in the upper left corner. The only exception to this is the NetBackup Main Window.

NetBackup Main Window

When you start the NetBackup browser, the NetBackup Main window displays.

Note When this window is displayed, the menus are active.



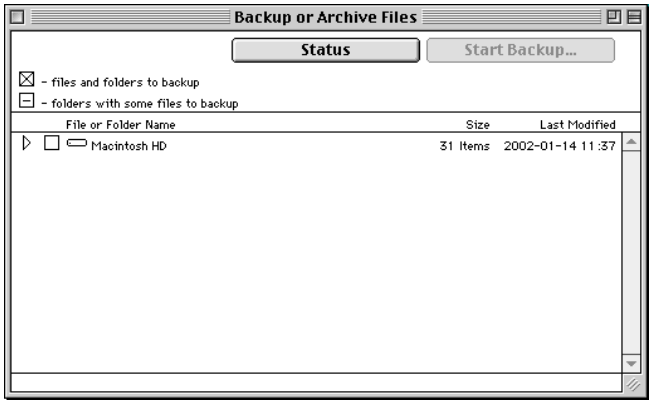
Choose Files to Restore Opens the Restore Files window.

Choose Files to Backup or Archive Opens the Backup or Archive Files window.

Backup or Archive Files Window

This window shows the folders and files that you can mark for backup. To open this window, click the **Choose Files to Backup or Archive** button on the NetBackup Main Window.

Note When this window is displayed, the menus are active.



Status	Opens the Status window.
Start Backup	This button will remain inactive until a file and / or folder has been selected in the File or Folder Name section of this window. When active, click this button to open the Start Backup dialog box.
files and folders to backup	This is a display only. It indicates how the check box for a file or folder will look when selected. When a folder is marked this way, all files in that folder will be backed up.
folders with some files to backup	This is a display only. It indicates how the check box for a folder will look when only some files in the folder are selected.

File or Folder Name

This area of the window contains a list of files and folders in the volume. The Size and the Last Modified time and date are also listed.

The volume and each folder are preceded by a triangle. When the triangle is pointed to the right, the volume or folder is closed. When the triangle is pointing down, the volume or folder is open. Click the triangle to open and close the volume and the folders.

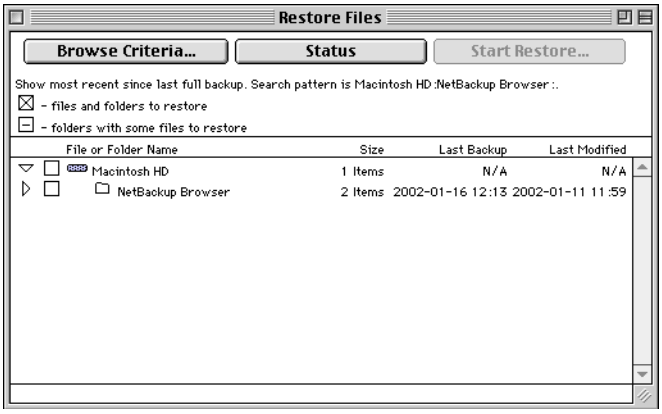
Each file and folder listing is preceded by a check box. Click on a check box to select or deselect a file or folder.

- When a check box preceding a file has an [X] in it, the file has been selected.
- When a check box preceding a folder has an [X] in it, all the files in the folder have been selected.
- When a check box preceding a folder has a [-] in it, only some of the files in the folder have been selected.

Restore Files Window

This window shows the folders and files that you can mark for restore. It contains only files and directories that were backed up. To open this window, click **Choose Files to Restore** on the NetBackup Main window.

Note When this window is displayed, the menus are active.



Browse Criteria	Click this button to display the Restore - Browse Criteria dialog box.
Status	Click this button to open the Status window.
Start Restore	This button will remain inactive until a file and / or folder has been selected in the File or Folder Name section of this window. When active, click this button to open the Start Restore dialog box.
files and folders to restore	This is a display only. It indicates how the check box for a file or folder will look when selected. When a folder is marked this way, all files in that folder will be restored.
folders with some files to restore	This is a display only. It indicates how the check box for a folder will look when only some files in the folder are selected.

File or Folder Name

This area of the window contains a list of files and folders in the volume. The Size and the Last Modified time and date are also listed.

The volume, and each folder, are preceded by a triangle. When the triangle is pointed to the right, the volume or folder is closed. When the triangle is pointing down, the volume or folder is open. Click the triangle to open and close the volume and the folders.

Each file and folder listing is preceded by a check box. Click on a check box to select or deselect a file or folder.

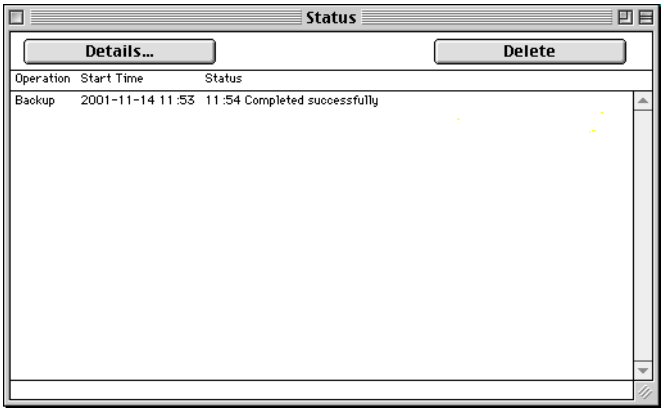
- When a check box preceding a file has an [X] in it, the file has been selected.
- When a check box preceding a folder has an [X] in it, all the files in the folder have been selected.
- When a check box preceding a folder has a [-] in it, only some of the files have been selected.

Status Window

The NetBackup Browser records the results of each user-directed operation in a log. After starting the operation, you can view the client progress logs. The Status window lists all progress logs currently residing on your system.

You can access this window by clicking the **Status** button on the Backup or Archive Files window and the Restore Files window.

Note When this window is displayed, the menus are active.

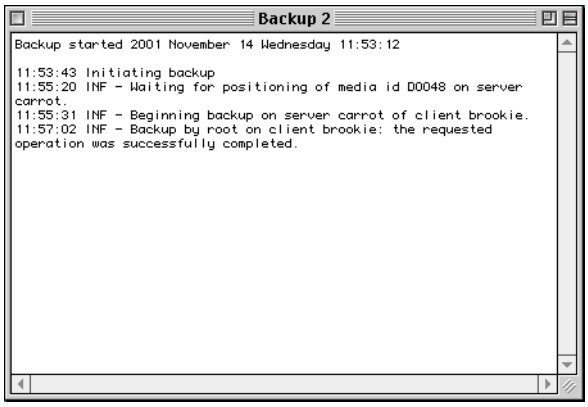


Details	Click this button to view detailed information for the selected operation in the Progress Log window.
Delete	Click this button to delete the progress log highlighted in the Progress Log List.
Progress Log List	This list contains progress logs for all backup and restore operations. Each operation is listed, followed by the Start Time and the Status of the job. To view a progress log, select one of the operations listed, then click **Details**. As an alternative, you can double-click on an operation in the list.

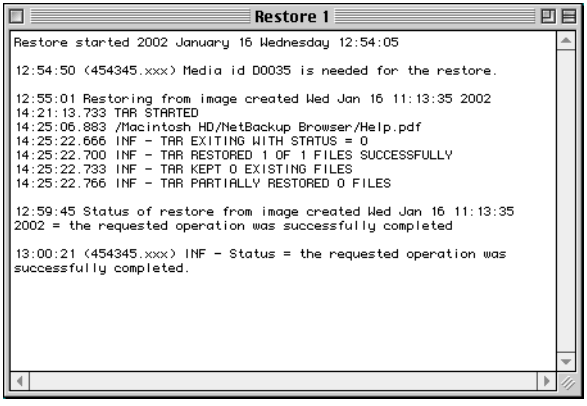
Progress Log Window

This is a display-only window. Information about the status of the backup or restore operation is displayed.

The following example is a progress log from a backup operation.


Backup 2
Backup started 2001 November 14 Wednesday 11:53:12
11:53:43 Initiating backup
11:55:20 INF - Waiting for positioning of media id D0048 on server carrot.
11:55:31 INF - Beginning backup on server carrot of client brookie.
11:57:02 INF - Backup by root on client brookie: the requested operation was successfully completed.

The following example is a progress log from a restore operation.

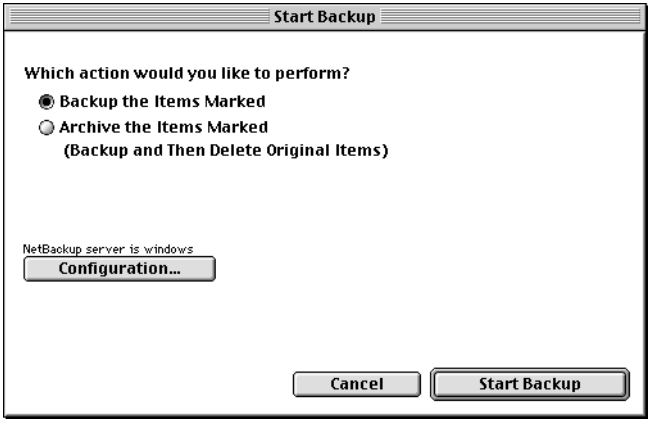

Restore 1
Restore started 2002 January 16 Wednesday 12:54:05
12:54:50 (454345.xxx) Media id D0035 is needed for the restore.
12:55:01 Restoring from image created Wed Jan 16 11:13:35 2002
14:21:13.733 TAR STARTED
14:25:06.883 /Macintosh HD/NetBackup Browser/Help.pdf
14:25:22.666 INF - TAR EXITING WITH STATUS = 0
14:25:22.700 INF - TAR RESTORED 1 OF 1 FILES SUCCESSFULLY
14:25:22.733 INF - TAR KEPT 0 EXISTING FILES
14:25:22.766 INF - TAR PARTIALLY RESTORED 0 FILES
12:59:45 Status of restore from image created Wed Jan 16 11:13:35 2002 = the requested operation was successfully completed
13:00:21 (454345.xxx) INF - Status = the requested operation was successfully completed.

Dialog Boxes

The dialog boxes in the NetBackup Browser are used to specify parameters for the backup, archive, and restore operations.

Start Backup Dialog Box

Access this dialog box by clicking **Start Backup** on the Backup or Archive Files window.



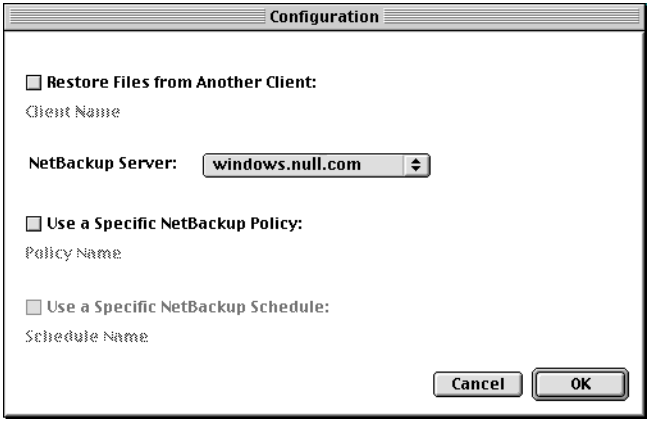
Backup the Items Marked	Click this radio button to back up the files and / or folders marked in the Backup or Archive Files window.
Archive the Items Marked	Click this radio button to back up and then delete the files and / or folders marked in the Backup or Archive Files window.
Configuration	Click this button to open the Configuration dialog box and change the NetBackup server configuration. The current server configuration is displayed immediately above the button.
Cancel	Click this button to close this dialog box without initiating a backup or archive of files and / or folders selected in the Backup or Archive Files window.
Start Backup	Click this button to initiate a backup or archive of files and / or folders selected in the Backup or Archive Files window.

Configuration Dialog Box

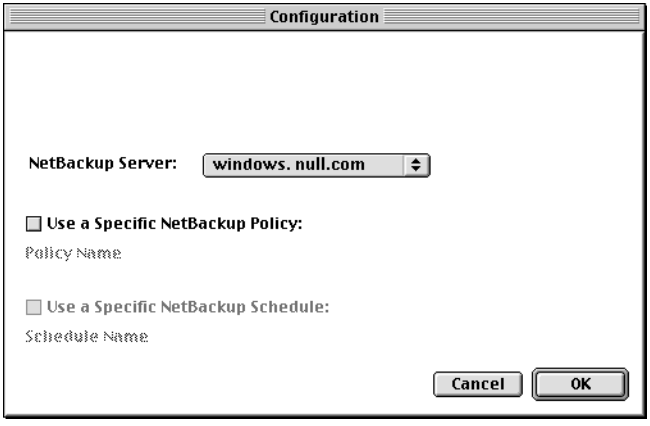
Access this dialog box by clicking **Configuration** on the Start Backup Files dialog box, the Restore - Browse Criteria dialog box, or from the **File** menu.

Depending on when this dialog box is accessed, different options may be available:

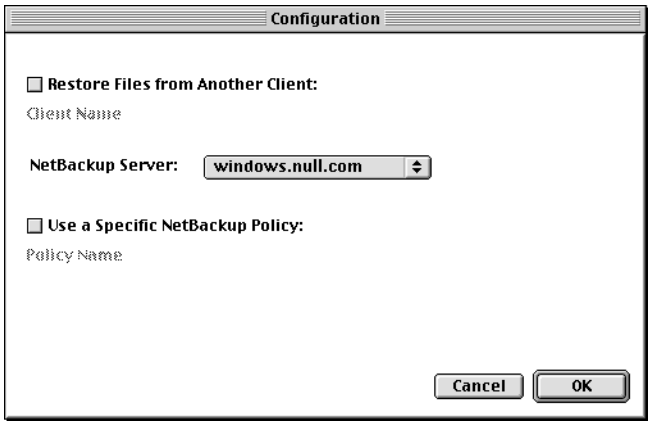
- If this dialog box is accessed from the **File** menu, before a backup or restore operation is initiated, the following is displayed.



- If this dialog box is accessed during a backup operation, only the **Use a Specific NetBackup Policy** radio button and text box are available.



- If this dialog box is accessed during a restore operation, only the **Restore Files from Another Client** and **Use a Specific NetBackup Policy** radio buttons and text boxes are available.

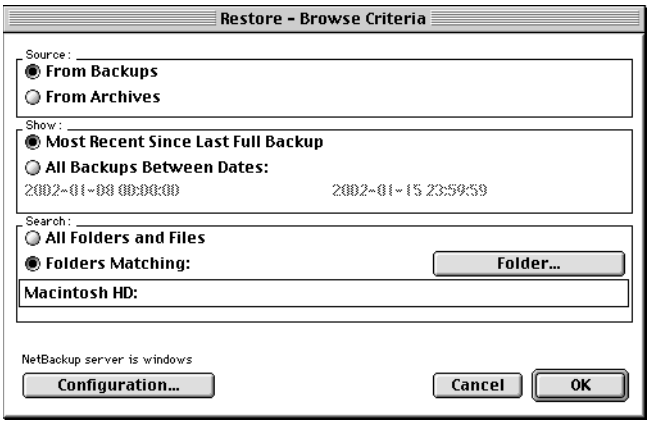


Restore Files from Another Client	This radio button is displayed when the Configuration dialog box is opened during a restore operation. If the configuration on the NetBackup server allows it, you can restore files to your NetBackup client that were originally backed up by another NetBackup client. Clicking this radio button will activate the text box immediately below the button. When the text box is activated you can select the client name from which you want to restore files.
NetBackup Server	Use this pop-up menu to select a NetBackup master server for user-directed backups.
Use a Specific NetBackup Policy	Use this radio button to specify the NetBackup policy you want to use for user-directed backups. Clicking this radio button will activate the text box immediately below the button. When the text box is activated you can select the policy name you want to use.
Use a Specific NetBackup Schedule	Use this radio button to select a NetBackup schedule for user-directed backups. Clicking this radio button will activate the text box immediately below the button. When the text box is activated you can select the Schedule Name you want to use.
Cancel	Click this button to close this dialog box without implementing changes.
OK	Click this button to confirm the setting and close this dialog box.

Restore - Browse Criteria Dialog Box

Access this dialog box by clicking **Browse Criteria** on the Restore Files window or from the **File** menu.

This dialog box is used to set parameters for the files and / or folders displayed in the File or Folder Name section of the Restore Files window.

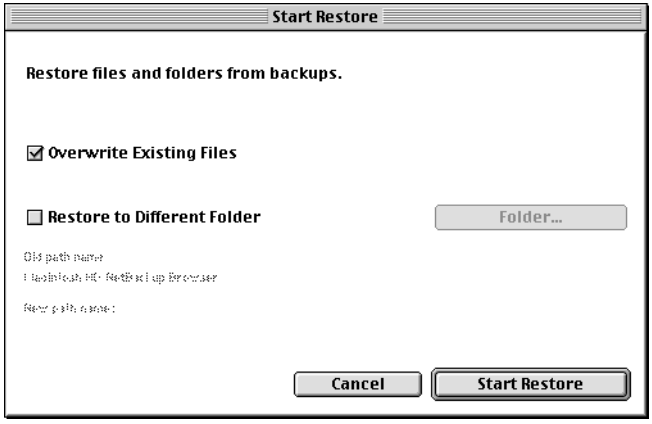


From Backups	Click this radio button to list files that have been backed up.
From Archives	Click this radio button to list files that have been archived. Archived files have been backed up, then deleted from the client.
Most Recent Since Last Full Backup	Click this radio button to list the most recent files or folders since the last full backup. The resulting list will display only one listing: the most current backup of a file or folder.
All Backups Between Dates	Click this radio button to generate a list of files and folders in the Restore Files window which have been backed up or archived between specified dates. Clicking this radio button will activate the text box immediately below the button. When the text box is activated you can select the start date and the end date. NetBackup will search the range of backups between the start date and end date. By default, the start date will be the start of the day one week ago and the end date will be the end of the current day.
All Folders and Files	Click this radio button to list all files and folders that have been backed up or archived.

Folders Matching	Click this radio button to specify the folder to list. Clicking this radio button will activate the **Folder** button and the text box immediately below the radio button. When the text box is activated you can select the folder to list.
Folder	Click this button to open the Macintosh Select a File dialog box. From this dialog box you can select a folder to list. The selected folder will be displayed in the text box immediately below the radio button.
Configuration	Click this button to open the Configuration dialog box and change the NetBackup server configuration. The current server configuration is displayed immediately above the button.
Cancel	Click this button to close this dialog box without initiating a restore of the files and / or folders selected in the Restore Files window.
OK	Click this button to confirm the settings and close this dialog box. The File or Folder Name section of the Restore Files window will list the files and / or folders specified by the parameters in this dialog box.

Start Restore Dialog Box

Access this dialog box by clicking **Start Restore** on the Restore Files window.



Overwrite Existing Files	Click this check box to allow NetBackup to replace files and / or folders with identical names with those being restored.
Restore to Different Folder	Click this check box to restore files and / or folders to a different folder. Clicking this check box will activate the **Folder** button and the text box immediately below the check box. When the text box is activated you can select a different folder to which files will be restored.
Folder	Click this button to open a Macintosh dialog box from which you can select a different folder. The selected folder will be displayed in the text box immediately below the radio button. You can also create a new folder.
Cancel	Click this button to close the Start Restore dialog box, without initiating a restore of files and / or folders selected in the Restore Files window.
Start Restore	Click this button to initiate a restore of files and / or folders selected in the Restore Files window.

In Progress Dialog Boxes

The In Progress dialog boxes display during lengthy NetBackup operations involving the NetBackup server. They function as indicators to you that an operation is in progress. They also provide you with the option of canceling the operation.

The following example indicates that the client is getting the image list from the server.

Operations

The following lists all operations which can be displayed in the In Progress dialog boxes:

- Sending backup request to server...
- Getting image list from server...
- Getting file list from server...
- Sending restore request to server...

Cancel

Click this button to quit the process in progress.

NetBackup 4.5 User's Guide for Mac OS

Glossary

access control list (ACL)

Security information associated with files on some file systems.

ACS

Automated Cartridge System. ACS can refer to any of the following:

- A type of Media Manager robotic control. This robot type is supported only by NetBackup DataCenter servers.
- The StorageTek (STK) system for robotic control.
- The highest-level component under STK's ACS library software, which refers to a specific standalone robotic library or to multiple libraries connected with a media passthru mechanism.

active job

A job for which NetBackup is currently processing backup or restore data.

activity logs

See "debug logs."

activity monitor

A NetBackup administration utility that displays information about NetBackup jobs and provides limited control over them.

administration client

See "remote administration console."

administrator

A user that is granted special privileges to install, configure, and manage the operation of a system, network, or application

AIT

Sony Advanced Intelligent Tape, a type of tape drive or media type.

alternate-client restore

See “redirected restore (different client).”

alternate-target restore

See “redirected restore (different target).”

alternate path restore

See “redirected restore (different path).”

alternate read server

A server used to read a backup image which was originally written by a different media server. The media server specified as Alternate Read Server must have access to the media containing the backup image or images it is configured to read.

archive

A special kind of backup where NetBackup backs up the selected files, and if the backup is successful, deletes the files from the local disk. In this manual, references to backups also apply to the backup portion of archive operations except where otherwise noted.

archive bit

A file-status bit that the Microsoft based operating system sets when it writes a file, thereby indicating that the file has changed.

attributes for a policy

Configuration parameters that control the behavior of NetBackup during operations involving this policy.

autochanger

See “robotic library.”

autoloader

See “robotic library.”

automatic backup

A scheduled backup by the master server.

back up

The act of copying and saving files and folders to storage media.

backup

Refers to the process of copying and saving files and directories to storage media. For example, *the backup is complete*. This term can also refer to the collection of data that NetBackup saves for a client during a backup or archive. For example, *duplicate the backup*.

Backup is two words when used as a verb. For example, *back up the file*.

backup, archive, and restore interface

The name of the NetBackup Microsoft Windows and Java based user interfaces for clients. On servers, these interfaces can be started through the NetBackup Administration Console.

backup window

The period of time during which backups can begin.

block size

The number of bytes in each block of data written on the media during a backup.

bp

A backup, archive, and restore utility for users on NetBackup UNIX clients. It has a character-based, menu interface that can be run from terminals that do not have X Windows capabilities.

bpadm

An administrator utility that runs on NetBackup UNIX servers. It has a character-based, menu interface that can be run from terminals that do not have X Windows capabilities.

bp.conf file

A NetBackup configuration file on UNIX servers and also on UNIX, Macintosh, and OS/2 clients.

bp.ini file

NetBackup initialization file for Novell NetWare target clients.

bpcd

NetBackup Client service on Windows and the NetBackup Client daemon on UNIX.

bprd

NetBackup Request Manager service on Windows and NetBackup Request daemon on UNIX.

cancel a job

Terminating a job and removing it from the job queue.

carousel

See “robotic library.”

catalogs

Internal NetBackup and Media Manager databases. These catalogs contain information about configuration, media, devices, status, errors, and the files and directories in the stored backup images.

CDF

Context-dependent file, which is a type of directory structure on a Hewlett-Packard system.

changer

See “robotic library.”

class

See “policy.”

client

The system with the files to back up, archive, or restore.

client-user interface

See “user interface.”

cluster

See master and media server cluster.

command lines

Commands that users can execute either from the system prompt or in scripts.

compression

The process of compacting data to enable more efficient transmission and storage.

configuration

The parameters that govern the behavior of an application. This term can also refer to the manner in which a network or system is laid out or connected (for example, a network configuration).

consolidated eject

A process of ejecting media for more than one Vault session at a time. A Consolidated Eject can be performed for one or more logical vaults at one time.

consolidated report

A process of generating reports for more than one Vault session at a time. A Consolidated Report can be performed for one or more logical vaults at one time. Consolidated reports are organized by report title, not by vault.

cpio

A UNIX command that can be used for copying files to or from a cpio archive on disk or tape.

ctime

The time that a UNIX inode was changed.

cumulative-incremental backup

A backup that is scheduled by the administrator on the master server and backs up files that have changed since the last successful full backup. All files are backed up if no prior backup has been done. Also see “differential-incremental backup.”

daemon

A program on a UNIX system that runs in the background and performs some task (for example, starting other programs when they are needed). Daemons are generally referred to as services or processes on Windows server systems.

database-agent clients

Clients with additional NetBackup software that is designed to back up relational databases.

database-extension clients

See “database-agent clients.”

debug logs

Logs that can be optionally enabled for specific NetBackup and Media Manager programs and processes and then used to investigate problems.

destination storage unit

A storage unit to which Vault sends the data from a duplication operation. If the duplicated backup images are to be vaulted, then the destination storage unit must correspond to the robotic volume group.

device delays

Delays caused by the device that are beyond the control of the storage application. An example is the time required to position tape under the read and write heads.

device host

A host (that has Media Manager installed) where a drive or robotic control is attached or is defined.

device monitor

A Media Manager administration utility that provides monitoring and manual control of Media Manager storage devices. For example, an administrator or computer room operator can use this utility to manually reset devices or set them to the UP or DOWN state.

DHCP

Dynamic host configuration protocol. This TCP/IP protocol automatically assigns temporary IP addresses to hosts when they connect to the network.

differential-incremental backup

Scheduled by the administrator on the master server and backs up files that have changed since the last successful incremental or full backup. All files are backed up if no prior backup has been done. Also see “cumulative-incremental backup.”

directory depth

The number of levels below the current directory level that the NetBackup interfaces show in their directory and file list displays.

directory tree

The hierarchical structure in which files are organized on a disk. Each directory lists the files and directories that are directly below it in the tree. On UNIX, the topmost directory is called the root directory.

disaster recovery

Recovering data from backups after a disk crash or other catastrophe.

disk

Magnetic or optical disk storage media.

disk-image backup

A bit-by-bit rather than a file system backup of a disk drive on a Windows platform.

DLT

Digital-linear tape or tape drive type.

Domain Name Service (DNS)

A program that handles name translation for network communications.

drive cleaning

The use of a special cleaning tape to clean the heads on a drive.

duplicate image

A copy of a backup image.

eject

Move media out of a robotic library.

encryption

Provides additional security by encrypting backup data on the client. This capability is available only with the NetBackup Encryption option.

entry and exit ports

See “media access port.”

exclude list

A list that designates files or directories to exclude from automatic backups.

expiration (image)

The date and time when NetBackup stops tracking a backup image.

expiration (volume)

The date and time when the physical media (tape) is considered to be no longer usable.

external media ID

This is an identifier written on a media cartridge or canister to help the operator identify the volume before inserting it into a drive or robot. For labeled media, the external media ID should be the same as the media ID recorded on the media.

EVSN

See “external media ID.”

FlashBackup

A special type of raw-partition backup that requires the NetBackup FlashBackup separately-priced option (this option is available only for NetBackup DataCenter).

flush level

Controls how often Netbackup clears its log files on a Novell NetWare or Microsoft Windows client platform.

fragment

A part of a backup or archive image. NetBackup can be configured to divide images into fragments when they exceed a certain size or span tapes.

frequency (backup)

How often NetBackup performs scheduled backups. For example, if the frequency is seven days then backups occur once a week.

FROZEN media state

If a volume is FROZEN, NetBackup keeps it indefinitely and can restore from it but not use it for further backups or archives.

full backup

A backup that copies, to a storage unit, all files and directories that are beneath a specified directory.

FULL media state

If this appears in a report or listing, it indicates the volume is FULL and cannot hold more data or be used for further backups.

global attributes

NetBackup configuration attributes that affect all policies.

GDM Dashboard

The name for the Global Data Manager interface. The Dashboard enables monitoring job and drive activity on multiple master servers, as well as providing alerts to problem conditions.

GDM Managed Server

A NetBackup master server that appears as a managed master server in the left pane of the GDM Dashboard.

GDM Server

A NetBackup master server that has the Global Data Manager license activated. When logging into this host, the user can monitor the activity on multiple master servers using the GDM Dashboard interface. If the host has installed the Advanced Reporter option, the reports show information on multiple master servers.

Global Data Manager (GDM)

A separately-priced option (for UNIX servers) that provides an interface with a tree view where the administrator can view and administer multiple master servers. The server where the option is installed is called a GDM Server.

Global Device Database

A single host that serves as the repository for global device configuration information. When you install NetBackup, by default the master server is configured as the global device database host.

GNU tar

A public domain version of the UNIX tar program.

goodies directory

A directory containing programs, scripts, and other files that are not formally supported.

GUI

Graphical user interface.

hard link

On UNIX, a hard link is a pointer to the inode for the data. On a Windows server, a hard link is a directory entry for a file. Every file can be considered to have at least one hard link. On NTFS volumes each file can have multiple hard links, and a single file can appear in many directories (or even in the same directory with different names).

heap level

A parameter for memory-heap debugging on a Novell NetWare or Windows NetBackup client.

hierarchical storage management

The process of automatically migrating selected files from a managed file system to specified migration levels on secondary storage, while maintaining transparent access to those files.

host

A computer that executes application programs.

host name

Name by which a host computer is identified by programs and other computers in the network.

HSM

See storage migrator.

image

The collection of data that NetBackup saves for an individual client during each backup or archive. The image contains all the files, directories, and catalog information associated with the backup or archive.

import

The process of recreating NetBackup records of images so the images can be restored.

include list

A list that designates files or directories to add back in from the exclude list.

incremental backup

See “cumulative-incremental backup” and “differential-incremental backup.”

inject

Move media into a robotic library.

inport

See “media access port.”

inode

A UNIX data structure that defines the existence of a single file.

install_path

Directory where NetBackup and Media Manager software is installed. The default on Windows servers is `C:\Program Files\VERITAS` and on UNIX it is `/usr/openv`.

jbpSA

The Java-based NetBackup interface for performing user backups, archives, and restores.

jnbSA

The Java-based NetBackup interface for administrators.

job

A parcel of work submitted to a computer. NetBackup jobs are backups, archives, or restores.

kernel

The nucleus of an operating system.

keyword phrase

A textual description of a backup.

kill a job

See “cancel a job.”

label

Identifier of a tape or optical disk volume. A recorded label includes a media ID.

A barcode label allows a barcode scanner to be used for media tracking.

library

See “robotic library.”

link

See “hard link” or “symbolic link.”

LMF - Library Management Facility

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

load

(noun) Amount of work that is being performed by a system or the level of traffic on a network. For example, network load affects performance.

(verb) Copy data to internal memory. For example, load the installation program.

(verb) Used to indicate tape drive initialization done when new media is being added.

logs

Files where a computer or application records information about its activities.

mailslot

See “media access port.”

man pages

Online documentation provided with UNIX computer systems and applications.

Master and media server cluster

A NetBackup master server and the remote media servers that it is using for additional storage. It is possible to configure clusters only with NetBackup DataCenter servers. NetBackup BusinesServer supports only a single server, the master.

Master of Masters

A NetBackup host where Global Data Manager software is installed. When logging into this host, the interface has a tree view where the administrator can view and administer multiple master servers.

master server

The NetBackup server that provides administration and control for backups and restores for all clients and servers in a master and media server cluster. NetBackup BusinesServer supports only a single server and it is the master.

media

Physical magnetic tapes, optical disks, or magnetic disks where data are stored.

media access port

A slot or other opening in a robot where you can insert or remove a tape without having to access the interior of the robot. After inserting a tape, you move it to a slot by using an inject command. Prior to removing a tape, you move it to the port by using an eject command. The inject and eject commands are supported through the add and move screens in the Media Manager administration interface.

media host

NetBackup server to which the job (client) is sending the data.

media ID

An identifier that is written on a volume as part of the recorded label.

Media Manager

Software that is part of NetBackup and manages the storage devices and removable media.

Media Manager Host

Host where Media Manager is installed (may have devices attached)

media server

A NetBackup server that provides storage within a master and media server cluster. The master can also be a media server. A media server that is not the master is called a remote media server. NetBackup BusinesServer does not support remote media servers.

menu interface

A character-based interface for use on terminals that do not have graphical capabilities.

mount

Make a volume available for reading or writing.

mount point

The point where a file system on a disk logically connects to a system's directory structure so the file system is available to users and applications.

MPX

See “multiplexing.”

mtime

The point in time when a UNIX or NTFS file is modified.

multiplexing

The process of sending concurrent-multiple backups from one or more clients to a single storage device and interleaving those images onto the media.

multiplexed group

A set of backups that were multiplexed together in a single multiplexing session.

NDMP

Network data management protocol. NetBackup requires the NetBackup for NDMP separately-priced option to support NDMP.

NetBackup Client service

NetBackup Windows service that runs on clients and servers and listens for connections from NetBackup servers and clients in the network. When a connection is made, this service starts the necessary programs.

NetBackup configuration options

On UNIX servers and on UNIX and Macintosh, clients, these settings are made in the `bp.conf` file. On NetWare target and OS/2 clients, they are in the `bp.ini` file. On Windows servers and Windows clients, these settings are called properties and are made through the Backup, Archive, and Restore interface or the Host Properties dialog in the NetBackup Administration Console.

NetBackup databases

See catalogs.

NetBackup Database Manager service

NetBackup Windows service that runs on the master server and manages the NetBackup internal databases (called catalogs). This service must be running on the master server during all NetBackup administrative operations.

NetBackup Device Manager service

The NetBackup Windows service that runs on a NetBackup server and starts the robotic control processes and controls the reservation and assignment of volumes. This service runs only if the server has devices under Media Manager control. The process is `ltid`.

NetBackup properties

Same as NetBackup configuration options but are called NetBackup properties on Microsoft Windows platforms.

NetBackup Request Manager service

The NetBackup Windows service that runs on the master server and starts the scheduler and receives requests from clients.

NetBackup Volume Manager service

A NetBackup Windows service that runs on a NetBackup server, allows remote administration of Media Manager, and manages volume information. The process is `vmd`.

NIS

Network information service.

NLM

NetWare loadable module.

NFS

Network file system.

nonrobotic

See “standalone.”

ODL

Optical disk library. This robot type is supported only by NetBackup DataCenter servers.

offsite volume group

A volume group in which media will appear after having been ejected from the robot for vaulting. When Vault ejects media it is moved from the robotic volume group to the off-site volume group.

offsite volume pool

A volume pool that contains media that is to be ejected and vaulted. Backup images written to an off-site volume pool by an original NetBackup backup policy or by Vault's duplication feature will be ejected and vaulted. More than one off-site volume pool can be specified for the Eject step of a Vault profile.

original backup

A backup image created by a backup job. A single backup image or all backup images created by an Inline Tape Copy (multiple copy) configuration are considered original backups. A backup image created by a duplication job is not an original backup.

outport

See "media access port."

partitions

The logical partitions into which a magnetic disk is divided.

patch

A program that corrects a problem or adds a feature to an existing release of software.

path length

Number of characters in a pathname.

pathname

The list of directories in the path to a destination directory or file.

PC clients

NetBackup clients that have Microsoft Windows, Macintosh, or IBM OS/2 operating systems.

peername

The name by which a computer identifies itself when establishing connections to other systems.

policy

Defines the backup characteristics for a group of one or more clients that have similar backup requirements.

port

A location used for transferring data in or out of a computer.

Also see “media access port.”

primary copy

The copy of an image that NetBackup uses to satisfy restores. When NetBackup duplicates an image, the original is designated as the primary copy.

privileges

The tasks or functions that a user, system, or application is authorized to perform.

profile

A vault profile is a way to save configuration settings. Specific parameters for duplication, catalog backup, eject, and report or any combination of these steps, are configured within a profile.

progress report

Log where NetBackup records events that occur during user operations.

proxy restore

A proxy restore allows the user to restore files that he has write access to, on a machine other than his desktop. The files must be in a backup of the machine to which they are being restored.

QIC

Quarter-inch-cartridge tape.

queued job

A job that has been added to the list of jobs to be performed.

raw-partition backup

Bit-by-bit backup of a partition of a disk drive on UNIX. On Windows, this is called a disk-image backup.

rbak

The program that Apollo clients use to read data from tape during a restore.

recorded media ID

This is an identifier written as part of the label on a volume and used by Media Manager to ensure that the correct volume is mounted. The recorded media ID should match the external media ID.

redirected restore (different client)

Restoring files to your client when they were originally backed up from a different client. The administrator using the interface on the master server can direct a restore to any client (this variation is called a server directed restore).

redirected restore (different target)

On a Novell NetWare server platform running the NetBackup target version of client software, this operation restores files to a different target than the one from which they were backed up.

redirected restore (different path)

Restores files to a different directory than the one from which they were backed up.

registry

A Microsoft Windows database that has configuration information about hardware and user accounts.

remote administration console

A Windows NetBackup client that has the administration interface software installed and can be used to administer NetBackup servers.

remote media server

A media server that is not the master. Note that only NetBackup DataCenter supports remote media servers. NetBackup BusinesServer supports only a single server, the master.

residence

In Media Manager, information about the location of each volume is stored in a volume database. This residence entry contains information, such as robot number, robot host, robot type, and media type.

resource

A Novell NetWare term that refers to a data set on the target. For example, in DOS, resources are drives, directories, and files. Also see “target service.”

restore

(verb) The act of restoring selected files and directories from a previous backup or archive and returning them to their original directory locations (or to a different directory).

(noun) The process of restoring selected files and directories from a previous backup and returning them to their original directory locations (or to a different directory).

retention level

An index number that corresponds to a user-defined retention period. There are 10 levels from which to choose (0 though 9) and the retention period associated with each is configurable. Also see “retention period.”

retention period

The length of time that NetBackup keeps backup and archive images. The retention period is specified on the schedule.

robotic arm

The component of a robotic library that physically selects the media (tape or optical disk).

robotic library

Refers to a robot and its accompanying software. A robotic library includes a collection of tapes or optical platters used for data storage and retrieval. For example, a Tape Library DLT (TLD) refers to a robot that has TLD robotic control.

robotic volume group

A volume group from which media will be ejected and vaulted. When Vault duplicates backups, they are duplicated to media in the robotic volume group.

root

The highest level directory in a hierarchical directory structure. In MS-DOS, the root directory on a drive is designated by a backslash (for example, the root on drive C is C:\). On UNIX, the root directory is designated by a slash (/).

Also, a UNIX user name having administration capability.

RS-232

An industry-standard interface for serial communications and sometimes used for communicating with storage peripherals.

RSM Interface

Application in Windows 2000 used to manage Removable Storage Manager (RSM) devices.

RSM - Removable Storage Manager

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

Also, a component of the Windows 2000 operating system that manages storage devices.

RVSN

See “recorded media ID.”

schedules

Controls when backups can occur in addition to other aspects of the backup, such as: the type of backup (full, incremental) and how long NetBackup retains the image.

SCSI

Small computer system interface. This is a type of parallel interface that is frequently used for communicating with storage peripherals.

server-directed restore

Using the user interface on the master server to restore files to any client. Only the administrator can perform this operation.

server independent restore

Restoring files by using a NetBackup server other than the one that was used to write the backup. This feature is available only with NetBackup DataCenter.

server list

The list of servers that a NetBackup client or server refers to when establishing or verifying connections to NetBackup servers. On a Windows server and Microsoft Windows clients, you update the list through a dialog box in the interface. On a UNIX server and UNIX and Macintosh clients, the list is in the `bp.conf` file. On NetWare target and OS/2 clients, the list is in the `bp.ini` file.

service

A program on a Windows server system that runs in the background and performs some task (for example, starting other programs when they are needed). Services are generally referred to as daemons on UNIX systems.

session

An instance of NetBackup checking its schedules for backups that are due, adding them to its worklist, and attempting to complete all jobs in the worklist. For user backups and archives, a session usually consists of a single backup or archive.

Session (Vault)

A vault session consists of executing a particular profile or profiles.

shared drives

See “Shared Storage Option (SSO).”

Shared Storage Option (SSO)

A separately priced VERITAS software option that allows tape drives (standalone or in a robotic library) to be dynamically shared among multiple NetBackup and Storage Migrator servers.

This option is supported only on NetBackup DataCenter servers.

SMDR

Storage management data requestor, a Novell NetWare program that provides its services transparently to all SMS modules and lets remote and local modules communicate with one another.

SMS

Novell NetWare storage management services.

source volume group

A volume group from which Vault can select backups to duplicate. This parameter is used to restrict the list of backups from all backups that reside on media in any volume group to backups that reside on media in a single volume group. Where a volume group corresponds to a particular robot, the profile will duplicate only backups on media in that robot. The Source Volume Group is normally only specified if you have multiple robots attached to the same server, for example you want to duplicate backups that reside in robot 0 to media that reside in robot 1.

SSO

See “Shared Storage Option (SSO).”

stacker

Usually a small robotic library that contains one drive only. See “robotic library.”

standalone

A qualifier used with drives and media to indicate they are not associated with a robot. For example, a standalone tape drive is one where you must manually find and insert tapes before using them. A standalone volume is one that is located in a standalone drive or is stored outside of a drive and designated as standalone in the volume configuration.

status code

A numerical code, usually accompanied by a troubleshooting message, that indicates the outcome of an operation.

storage migrator

Refers to the VERITAS Storage Migrator line of hierarchical storage management products for UNIX and Windows. These products make extra room on a disk by transparently moving data to other storage and then transparently retrieving the data when it is needed by a user or application.

Storage Migrator is available only for NetBackup DataCenter servers.

storage unit

Refers to a storage device where NetBackup or Storage Migrator stores files. It can be a set of drives in a robot or consist of one or more single tape drives that connect to the same host.

SUSPENDED media state

If a volume is SUSPENDED, NetBackup can restore from it but cannot use it for backups. NetBackup retains a record of the media ID until the last backup image on the volume expires.

symbolic link

On a UNIX system, this is a pointer to the name of the file that has the source data.

TapeAlert

Allows reactive cleaning for most drive types and is a function of the tape drive.

tape format

The format that an application uses to write data on a tape.

tape marks

A mark that is recorded between backup images on a tape.

tape overhead

The space required for data that is not part of the backup images. For example, tape marks and catalogs of what are on the tape are considered overhead.

tape spanning

Using more than one tape to store a single backup image.

tar

Tape Archive program that NetBackup uses to extract backup images during a restore.

target

See “target service.”

target service

A Novell NetWare service that needs storage management. The SMS views all services (for example, print services, communication services, workstations) as targets.

Target Service Agent

A Target-service agent is a Novell NetWare agent that prepares the target's data for SMS during a backup and for the target during a restore.

TLD - Tape Library DLT

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TLH - Tape Library Half-inch

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

TLM - Tape Library Multimedia

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

TL4 - Tape Library 4MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TL8 - Tape Library 8MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

timeout period

The period of time that an application has allotted for an event to occur.

TIR

See “true image restore.”

tpconfig

A Media Manager administration utility for configuring devices which is started from the command line. On UNIX, it has a character-based menu interface that can be run from terminals that do not have X Windows capabilities. tpconfig also has a command line interface.

transfer rate

The rate at which computer information is transferred between a source and a destination.

transport

See “robotic arm.”

true image restore

Restores the contents of a directory to what it was at the time of any scheduled full or incremental backup. Previously deleted files are ignored.

TS8 - Tape Stacker 8MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TSA

See “Target Service Agent.”

TSD - Tape Stacker DLT

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TSH - Tape Stacker Half-inch

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

unassigned media

Media that contain no valid images. A piece of unassigned media has an entry in the volumes database but no entries in the images database. Unassigned Media do not have a “time assigned” in the Media section of the GUI.

user interface

The program used to perform user backups, archives, and restores.

user operation

A backup, archive, or restore that is started by a person on a client system.

Vault

Vault is a separately-priced NetBackup option that provides offsite backup management. Vault automatically duplicates specified backup images, and automates the process of offsite media rotation (a critical component of any backup or disaster recovery strategy). Vault manages offsite storage and retrieval of media for original backups, duplicate backups, and catalog backups. Additionally, NetBackup Vault generates reports to track the location and content of each piece of media.

vault

In the context of the NetBackup Vault, a vault is logical entity associated with a particular robot that acts as a designated holding place for backups that will eventually be sent to a physical offsite vault. The term ‘vault’ is used to refer both to the process, and to the physical storage location of a set of tapes offsite.

vault process

Vaulting is the process of choosing backup images to duplicate or eject, optionally duplicating backups, ejecting duplicate or original media, storing it at an offsite location, and later returning expired media to your robot. Vaulting is an integral part of the disaster recovery process.

verbose flag

Configuration file entry that causes a higher level of detail to be written in the logs.

verify

An operation that compares the list of files that are actually on a volume with what NetBackup has recorded as being on it. The data that is on the media is not verified.

vmadm

A Media Manager administrator utility for managing volumes. It runs on UNIX and has a character-based, menu interface that can be run from terminals.

vm.conf

A Media Manager configuration file with entries that include the servers that can manage local devices and default media ID prefixes for media that do not contain barcodes.

volume

Media Manager volumes are logical units of data storage or cleaning capability on media that have been assigned media IDs and other attributes, which are recorded in the Media Manager volume database.

volume configuration

Refers to configuration information that is stored in the Media Manager volume database.

volume database

An internal database where Media Manager keeps information about volumes. All hosts (where Media Manager is installed) have a volume database. However, the database is empty unless the host is designated as a volume database host.

volume database host

The host (where Media Manager is installed) that contains information about the volumes that Media Manager uses in a device. Because NetBackup BusinesServer supports only a single server, the volume database host is always on the same server.

volume group

A set of volumes that are configured within Media Manager to reside at the same physical location (for example, in a specific robot).

volume pool

A set of volumes that are configured within Media Manager to be used by a single application and are protected from access by other applications and users.

wakeup interval

The time interval at which NetBackup checks for backups that are due.

wildcard characters

A character that can be used to represent other characters in searches.

Microsoft Windows

(noun) Describes a line of operating systems developed by Microsoft, Inc.

For more information on the Windows operating systems that NetBackup supports, refer to the VERITAS support web site at `http://www.support.veritas.com`.

Windows

(adjective) Used to describe a specific product or clarify a term. Some examples are: Windows 95, Windows 98, Windows NT, Windows 2000, Windows servers, Windows clients, Windows platforms, Windows hosts, and Windows GUI.

Windows servers

A term that defines the Windows server platforms that NetBackup supports; those platforms are: Windows NT and 2000.

Windows clients

A term that defines the Windows client platforms that NetBackup supports; those platforms are: Windows 95, 98, ME, NT, 2000, XP (for 32- and 64-bit versions), and LE.

Windows Display Console

A NetBackup-Java interface program that runs on Windows 2000, NT, 98, and 95 computers. Users can start this interface on their local system, connect to a UNIX system that has the NetBackup-Java software installed, and then perform any user operations that their permissions allow.

WORM media

Write-once, read-many media for optical disks. NetBackup BusinesServer does not support WORM media.

xbp

The X Windows-based backup, archive, and restore program for users on NetBackup UNIX clients.

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